



# AMC-4W Access Modular Controller



- ▶ Intelligent access manager for 1 ... 4 entrances
- ▶ 4 Wiegand Interfaces, incl. the power supply for the reader
- ▶ Standard 64 MB Compact Flash memory—expandable up to 1GB
- ▶ LCD display to show information
- ▶ Self-controlling transmission and receiving switch-over
- ▶ Individual electronic protection for the plugs and outputs
- ▶ Connection for an externally mounted tamper switch

The AMC-4W (Access Modular Controller) is employed as access controller in the electronic access control system ACE (ACCESS ENGINE) as of REV. 1.3.x. The unit controls a group of 1 to 4 access points. These access points, also called entrances, are essentially doors, gates, barriers, turnstiles of various types, man-traps, card readers, door opener elements and sensors. The AMC-4W can work with up to 4 I.D. card readers and is designed to handle all necessary access logic at the assigned entry points. Status tests are possible via the 8 analog inputs. The 8 relay outputs are used to activate door opener elements and/or provide danger alerts or alarm signals. The AMC-4W retains all required information in a battery-buffered memory and a Compact Flash memory element, in order to independently conduct an authorization check at the access point, make entry decisions, control door opening/closing elements and register entry events, even when offline.

## System Overview

As shown in the illustration, the AMC-4W is incorporated between the host system Access Engine and the peripheral units.

It is connected to the host system via RS485, RS232 (for modem operation, for example) or Ethernet, depending on the system size. The specific host interfaces are selected directly during installation. All 3

interfaces are available in the unit as delivered. If operated with RS485, up to eight AMC-4Ws can be connected to a single partyline.

Up to four slots are available for the reader, incl. power supply on the peripheral bus.

The following card readers can be connected:

- Card readers with Wiegand interface
- ARD-R10; ARD-R30; ARD-R40; ARD-RK40-AMC01; ARD-ENTRYPROX; ARD-PROXPOINTPLUS; ARD-MINIPROX; ARD-PROX80
- Data format 26-bit or 37-bit Wiegand, or for all ARD-RXX readers MIFARE CSN
- HID 5375AGN00
- HID 6181 AKT000000
- Additional Wiegand readers that are compatible with the above readers

## Functions

- Saving the following (received via download):
  - Master data
  - Authorizations
  - Access models
  - Display texts
  - Reader parameters
- Interpretation of the transaction data by the reader
  - Authorization check
  - Host query
  - Pin code

- Control/monitoring
  - Granting or denying access
  - Alarm switching
  - Door status
  - Reader operating status
  - Internal alarm status
- Messages about the Access Engine
  - Host queries
  - Transaction data to be saved
  - Errors and fault messages
  - Alarm messages
- Power supply
  - Reader
  - Door opener
  - Current feeds to contacts

## Installation/Configuration Notes

### Host ports

#### RS232 host interface

The Access Engine application administers up to 32 serial direct ports so that it is theoretically possible to serially connect up to 32 AMC-4Ws directly.

**Note** As PCs only have 2 COM ports max. in the standard configuration, the following connection variants are to be favored for configurations with more than 2 AMC-4Ws:

#### RS485 interface

If more than 2 AMC-4Ws are connected, the interface converter AMC-MUX should be used.

The interface converter generates an RS485 bus (2 or 4-wire) out of a COM port, thereby enabling up to 8 AMC-4Ws to be connected at the distances typical of RS 485.

Alternatively, the RS485 host interface can be activated in the AMC-4W via the jumper position (2 or 4-wire). There are two connection points—one for the inbound bus system, and one for the outbound bus system.

### Volume limitations

- Please follow the planning guidelines for the Access Engine when determining the max. number of access controllers connected to an access control system as well as the number of employees
- Max. 4 access points/entrances
- Max. 4 card readers
- Max. 3 peripheral units via internal RS485 bus
- Max. 200000 employees with memory expansion AMC-CF-1024 (MB)

### Card reader connections

#### Wiegand interface

The AMC-4W has 4 connections to connect up to 4 card readers.

The card reader interfaces and door opener elements are distributed to the 4 channels with 4 connectors points each.

The following definitions apply to Wiegand interfaces:

- 10-wire interfaces (incl. shield)
- Max. 158 m cable length to card reader
- 26-bit Wiegand format
- 37-bit Wiegand format

Standard configuration of the Wiegand interface for the card reader:

1	Reader power supply 12V+
2	Reader power supply 12V-
3	Data line 0
4	Data line 1
5	Shield
6	Green LED
7	Red LED
8	Audible alarm
9	Delay
10	Present card

### Readers and door models

The AMC-4W administers the connected readers via pre-defined door models.

Door models regulate in accordance with the security requirements in force

- The number and usage category of the readers (input and output reader, input reader and push-buttons etc.) which are connected to the AMC4W.
- The number and usage category of the AMC inputs, e.g. door status, request-to-exit push-buttons, turnstile position, Sec.Sys., etc.
- The number and usage category of the AMC outputs, e.g. door openers, man-trap contact, traffic light control, etc.

The max. number of entrances to be administered by an AMC-4W is ultimately determined by the door models used and the readers and inputs/outputs required by the door models.

**Note** When planning an access system, the first step is therefore assigning the necessary or suitable door models to all entrances which must be monitored. Only then can the AMC reader configuration be worked out.

### Potential equalization – grounding

- If there are different earth potentials, they can be equalized via jumper positions with a protective earth.
- A line (shielding, potential equalization line) may only be connected to the protective earth at one point.
- You will find more information on this topic in the installation manual.

## Contacts

### Inputs

The eight analog inputs can be used as digital or analog contacts. For analog use, resistor values can be assigned that permit additional testing for a cable break or short circuit.

### Relay outputs

The 8 relay outputs can operate in the following modes by means of the jumper position:

- Output is potential-free and is supplied with external power
- Power is looped in for the potential-free contact outside (with additional individual protection)

### General notes

- Installation should be performed in the "secured area".
- You will find detailed connection conditions in the installation manual.
- The mains supply (230 V~) must be connected on the customer's premises by an authorized installer.

## Technical Specifications

Hardware	CPU RENESAS M16C80
	256 kB-EPROM/FLASH
	256 kB-SRAM
	Serial EEPROM
	RTC
	Plug-in Compact Flash memory 64MB
	Expansions: 128 MB, 256 MB or 1 GB
	Battery for SRAM and RTC
	Host address can be set using slide switch
	Host interface:
	- RS485 (2 or 4-wire)
	- RS232
	- Ethernet 10BaseT (TCP/IP) with RJ45 optional
	4 Wiegand slave interfaces
	8 relay outputs
Temperature	8 analog inputs
	Tamper switch
	Ethernet 10BaseT (TCP/IP) with RJ45
	2 (4) opto-decoupled interface RS485
	LBus; RS485 interface, opto-decoupled,
	2-wire, 19,200 Bd
	Reset push-button
	0°C to +45°C
	12V DC, max. 60VA
	Available for external units: 56 VA
Protection type	IP 20
Housing	Base: PPO (UL 94 V-0)
	Cover: Polycarbonate (UL 94 V-0)
Color	White
Dimensions	W x H x D (mm): 225 x 88 x 60
Weight	Approx. 0.4 kg
Construction type	Rail mounting

## Ordering Information

AMC-4W-NET access controller with Wiegand slave interfaces and network connection to the host system Access En- gine.	AMC 4-W-NET
AMC-4W-NET-CF access controller Wiegand slave interfaces, network connec- tion to the host system and Compact Flash memory.	AMC 4-W-NET-CF
<b>Accessories</b>	
AMC-MUX interface converter	AMC MUX
AMC-MUX-EXT interface extension	AMC MUX-EXT

**Ordering Information**

AMC PS-12V-60W power supply Built-in power supply for control cabinets to be clipped onto a TS35 rail. It is also necessary to order the AMC PS cable set.	AMC PS-12V-60W
AMC UPS-12V uninterruptable power supply Battery management system for uninterruptable DC system voltages for standard applications. The AMC UPS cable set and the AMC BATT-12V-7AH battery must also be ordered.	AMC USP-12V
AMC CF-128 memory expansion Compact Flash memory with 128 MB storage to expand the capacity of the AMC-4W.	AMC CF-128
AMC CF-256 memory expansion Compact Flash memory with 256 MB storage to expand the capacity of the AMC-4W.	AMC CF-256
AMC CF-1024 memory expansion Compact Flash memory with 1 GB storage to expand the capacity of the AMC-4W.	AMC CF-1024
AMC RAIL-250 mounting rail Mounting rail (250 mm) for mounting the access controller AMC-4W without the metal housing AMC ENC-V1.	AMC RAIL-250
AMC RAIL-400 mounting rail Mounting rail (400 mm) for mounting the AMC-4W, AMC PS-12V-60W and AMC UPS-12V when the metal housing AMC ENC-V1 is not used.	AMC RAIL-400
AMC BATT-12V-7AH battery 12V battery for powering the AMC-4W in the event of power failure. Only use in conjunction with AMC UPS-12V.	AMC BATT-12V-7AH

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